THE

HORTICULTURIST.

VOL. XX.....MARCH, 1865.....NO. CCXXV.

LACKLAND MAKES A BEGINNING.

My friend Lackland, as I suspected he would, has purchased a little place of two and a half acres, some thirty or forty miles from the city by the New Haven railway. He makes his trips to and fro with a little badly-disguised fear of decayed "sleepers" it is true; and suffers from the still more frequent embarrassment of riding upon his feet—all the seats being occupied and the company being too miserably poor to add to the number of their carriages. He was disposed to resent such things at the start, and even was stirred into writing a brief and indignant appeal to an independent morning journal; but upon being answered by an attorney for the company or a road commissioner, who called him names and abused him as if he had been a witness before a court of justice, he subsided into that meek respect for corporations, and awe of all their procedure, which are the characteristics of a good American citizen, and of most well-ordered newspapers.

New Yorkers learn how to bear such things; there is no better schooling for submission than a two or three years course of travel upon the city railways; Lackland is submissive. And after a fatiguing day in Maiden Lane, having come up Fourth Avenue with a stout black woman in his lap, he is grateful for even a standpoint upon one of the New Haven cars; and if some rough customer near him berates the company, alleging that "these ere railroad folks don't care much about a fellers comfort, so they gits his money," Lackland shows a sickly smile of sympathy, and—looking about him to see that no conductor or possible director is within hearing—says meekly, "no, they don't."

But this is all by the way.

My friend Lackland, has as I said, bought a small country place within a mile of village and station, for which the purchase-money in round numbers was six thousand dollars. A certain proportion of this sum was paid in view of a projected horse railway, which is to pass the door, and to unfold building sites over his whole area of land. As yet, however, it is in the rough. There is indeed "a brand-new house upon it—two stories, and only three years built," as he writes me, "with ell wash-room, and all well painted with two coats of white

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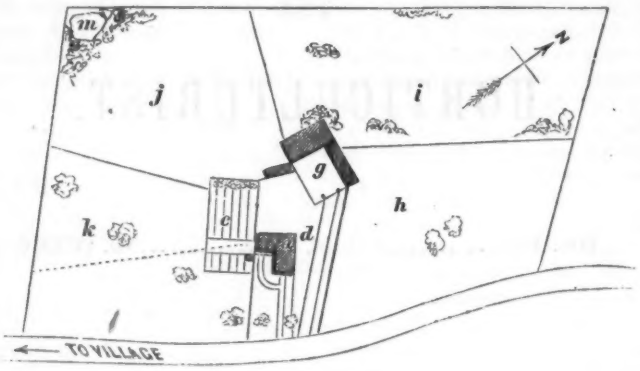
lead. The property is distributed into six different enclosures, of which I send you a draft."

And herewith I give the exhibit of Mr Lackland's little place with its condition at time of purchase.



"You will observe" he continues, "that there is rather a cramped aspect about the door-yard and entrance, these being hemmed-in by a white picket fence on either side and in front. It is unfortunately the only sound fence about the premises; the garden (*c*) showing a tottering remnant of one of the same pattern, and the other enclosures never having boasted anything finer than "posts and rail" fixtures, with a half-wall to prop them, upon some of the exterior lines. The enclosure (*d*) is what the previous owner called his back-yard; it was traversed, as you see, by a cart path leading straight to the barn court, and was encumbered with a prodigious array of old wood, brush heaps, a broken cart or two, and one of the most luxurious thickets of burdock and stramonium which I ever remember to have seen. He (former owner) tells me stramonium is good for 'biles.' Is it?

"The buildings around the little enclosure marked (*g*) will explain themselves—a barn, a hog pen, a cow-shed—all in most dilapidated condition, so much so that I shall have to make a new investment in the way of stable room. There is the remnant of an old orchard upon the plot marked (*k*) with only three or four ragged and disorderly looking trees; at (*j*) again, there is a patch which has been in potatoes and corn for an indefinite number of years, and which has a terrible bit of ledge in the corner (marked *m*) overrun with briars and stunted cedars, that I fear, will cost a round sum to reduce to a level. The fields (*i*) and (*h*) are pieces of mangy grass scattered over with occasional bushes, but I do not despair of putting a smooth face upon them. The only view from the premises that is worth considering, is rather a pretty one, (indicated by a dotted line) of the village spire, and a few of the village roofs peeping out from the trees, and back of them a glimpse of the Sound. I send a rough sketch of it.

"But the misfortune is, the view is only to be seen to advantage from my wash-room door, or from one spot in the garden just now encumbered with enormous Lawton briars. The first position is soapy and damp for visitors, and the last—tedious.

"What I wish of you,"—my friend Lackland continues to write,—"is to give me a hint or two about the combing of this rough little home of mine into shape. And in order to a more definite understanding I will tell you briefly what I *don't* want, and next what I *do* want.

"And first, being a plain man, I don't want crooked walks, for the mere sake of having them crooked; I don't want to go into my gate in a hurry—when I know dinner is already smoking on the table—and yet, after entrance, be compelled to describe a circle planted with I know not what barbarian evergreens, before I can get to my door.

"I don't want my stable yard absolutely in sight; least of all do I wish to be compelled to traverse it, before I can get sight of my pet mare.

"I don't wish a carriage drive to my door-step, when my door is only fifty feet from the road by a tape-line.

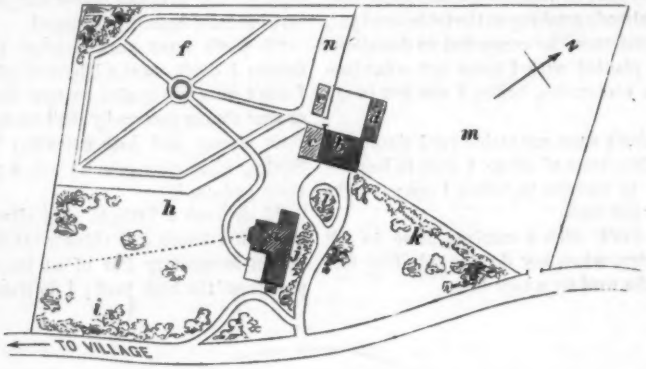
"I don't want to pull down or to move the present house, because in so doing I should sacrifice a capital cellar, which I must do the previous owner the justice to say, has been capitally arranged.

"I don't want such a great array of fences; I don't want a labyrinth of walks; I don't want my garden so near the street as that chance passers-by shall see me in my shirt sleeves and hail me with: 'Hallo! Squire, what you goin to ask a peck for them pas'nips?'

"I *do* want a little of good elbow room about the house and entrance as if I were not in momentary fear of an incursion of pigs from the back yard; I do want a gar-

den of somewhat larger area where I can grub away at my will; and if you draw me a plan, put at least a fourth of the whole land into herbs and garden stuff. I want the view kept of the village spire, and the back ground of sea, and some lounging place from which I may look upon it at my leisure. I want a poultry yard of such dimensions that I may count upon a fresh egg every day to my breakfast; I want provision for a salad on Easter Sunday; and if you could contrive me some cheap fashion of a cold grapery to try my hand upon, I should be thankful; only let it be so situated that I may, (if grapes fail) turn it into a winter room for my hens. I want you to tell me what I can do with the rock I must blast away from the ledge in the corner of the potatoe patch. I want something I may call a lawn—to satisfy my wife's pride—and a bit or two of shrubbery in it. But above all, I want at least a third of the land in good wholesome greensward, with no encumbering trees—whether fruit or exotic—where I may turn my mare to a run, or play at base ball with my boys, or cut a bit of hay, or—if the humor takes me—try my hand at a premium crop of something."

Upon this I made a little study of Lackland's plot of land and furnished him with this design.



And I furthermore said to him, your ledge (which I have marked *g*) is one of the most picturesque features about your place; so I have thrown it boldly into your garden, in such way that it will be in full view from the gate, and I advise you to cherish it—to plant columbines on its ledges, and your Tom Thumb geraniums along its lower edge, in such sort that in autumn they will seem like a running flame of fire skirting the cliff and blending with the crimson verbenas upon the circle in the centre of the garden. In (*f*) you have a map of your work place, and to make the privacy of it entire, you may plant a hedge for a barrier along the line (*h*) or you may set a trellis there and cover it with vines. At (*e*) you have a hot-bed to provide your Easter salad, and you may multiply the hot-beds if you like along the border (*n*) which is made under shelter of a high fence to the north. At (*c*) you have your cheap grapery built against the south-side of the barn, and convenient for the transmutation you suggest; at (*b*) is your stable, and at (*d*) your poultry house with a sunny stable court to the south of it. At (*m*) you have your paddock for the mare, or your mall for base-ball, or your plow-ground for a premium crop—utterly free from shrubbery, and communicating with barn and with street alike. The lawn explains and describes itself; but I would only suggest that the shrubbery marked (*j*) will be a capital spot, under shade from south, for your Rhododendrons*, and the circle (*l*) I would advise you to fill with a dense coppice of hemlock spruce to break the wind from the north. Along the border marked (*k*) you can either plant apple trees, and at fifteen feet of distance a thicker line of dwarf pears (being careful to trench or subsoil the ground), or you can stock it with a protecting belt of evergreens. In either case, give thorough cultivation, if you wish the best results.

At (*a*) is the "brand-new" house remodelled in such fashion that you have a southern porch, a kitchen in the rear, and

* I observe that your correspondents "G" and "H. W. S.," have discussed the method of isolating a border of rhododendrons from the influences of a forest screen to the south—one suggesting simple amputation of the roots of the trees forming the screen, and the other the interposition of a wall. The last is expensive and the former liable to be neglected. An open ditch, some two feet deep by eighteen inches wide, I have seen most effectively employed for the end proposed, by a very successful southern horticulturist, who succeeded, year after year, in securing a magnificent bloom of some ten or twelve varieties of Azaleas, within twenty feet of gigantic cypresses and magnolias. The ditch may also serve as a convenient receptacle for leaves and the rakings of the borders.

a bay-window in your dining-room, which commands (by the dotted line) the same view which now wastes its charm upon the stout woman at your wash-tub.

It is possible that my friend Lackland may report progress to me some time in the course of the summer.

EDGEWOOD, *Jan.* 1865.

A CHAPTER ON ORCHIDS.

BY ORCHIS.

Continued from February Number.

BUT the beginner in orchid culture must first obtain his plants—by no means an easy matter. The prices of all orchids are high; all that are worth growing are expensive, and in this country there are no large sale collections.

We may, however, obtain from many of the florists in the vicinity of New York a choice collection of the Mexican and South American orchids, but if a grower would indulge in East Indian epiphytes to any extent, he must import them from England or the Continent.

A good way to obtain a stock of Mexican or West Indian orchids is through some friend in those countries; they will generally arrive in good condition, but for one worth growing, the importer will find at least a dozen perfectly worthless.

The treatment of orchids, on arrival, is very simple. They should at once be carefully examined, and all dead or decaying roots, and all diseased, pseudo bulbs be removed with a sharp knife. The plants should then be laid upon damp moss in a shady part of the orchid house, in moderate heat. As soon as any of them show signs of growth by the budding of eyes at the base of the pseudo bulbs, they should be potted, or basketed, or fastened to a block, according to the nature of the plant, and be moderately watered until active growth begins, when more water may be given and continued until growth is completed, when the plant should go to rest. The after treatment should be the same as that accorded to established plants.

A long time may often elapse before the production of buds, but as long as the pseudo bulb remains fresh and green, there is hope of producing a plant.

If a portion of the pseudo bulb is decayed, that should be cut off, and all fresh cuts be rubbed with powdered chalk or flower of sulphur, which will dry up the wound and arrest the progress of decay.

Eyes, or buds, are often produced from a piece of the bottom of a pseudo bulb; sometimes, though rarely, from the top, when the bottom is cut away.

Terrestrial orchids should be potted as soon as received, but the earth should be only kept damp till they show signs of growth, when water may be more freely administered.

Potting is a very simple operation. The pots should be clean and proportioned to the size of the plant; over-potting is always injurious. The first requisite to be secured is good drainage; indeed, this is one of the most important elements of success in orchid culture; for without it the plants will not thrive; orchids are more impatient of standing water at the roots and of a sour, heavy soil than any other plants.

If the pots are large enough, it is well to invert a small pot inside of the larger one, and to fill around this with broken potsherds; if the pot is small, broken potsherds alone suffice; over the potsherds spread a layer of moss; the pot should generally be two-thirds filled with drainage; and then fill in the pot with pieces of peat, varying in size from a marble to a hen's egg, according to the size and requirements of the plant, mixing in moss and pieces of pots-

herds, if required. Raise the soil about an inch above the pot, sloping it up from the rim gradually; and on the mound thus formed set the plant, securing it by little pegs; the roots will soon grow and sustain the plant. The moss used should be the white sphagnous species of meadows; if this is not procurable, coarse wood moss will do.

Terrestrial orchids need a stronger compost than the epiphytal species; a mixture of peat, leaf mould and well-rotted cow-manure, with good drainage of potsherds covered with moss, suits such species as Bletia, Cypripedium, etc.; care must, however, be taken not to have the compost too fine, lest it become sodden.

Such plants as Cyrtopodiums need a coarse compost of peat and turfy earth, with an admixture of drainage.

Plants in baskets should be more lightly potted than those in pots, and as many send their flower spikes down through the bottom of the baskets, care must be taken that no coarse drainage material arrests the downward progress of the spike, and thus causes it to rot off.

Baskets for plants of this nature should be rather shallow, be lined with moss, and filled with a potting material of moss and peat.

Orchids grown on blocks require more care than those in pots and baskets in regard to water.

They should at first be bound on to the blocks with copper or lead wire; as soon as roots are produced, they will cling to the block and hold the plant, and the wire may then be removed.

Lelias, Phalænopsis, Barkerias, Sophronitis, many Cattleyas, Dendrobiums, Epidendrums, and numerous other species are best grown on blocks. During the growing season it is often well to bind a little moss round the blocks, because if then the plants become very dry, they may be seriously injured; this may be removed when the plants should go to rest.

The wood for blocks should be cork, locust, apple, plum, oak or elm; the blocks should be well seasoned.

Where plants are imported growing on branches, they should by no means be removed, as they flourish much better on the wood upon which they naturally grew.

Baskets may be made of strips of cork or rods of hazel, maple, or willow.

The rule has ever been given that all resinous woods should be avoided, but we have used baskets made of the ends of spruce poles without any bad effects.

Baskets may also be made of galvanized iron wire, and if the patterns are well chosen, are very neat and pretty.

Water used for orchids should always be of the temperature of the house. To obtain this, it is necessary to have a cistern in the house, which should be supplied with water from the roof, as rain water is most suitable for the plants. A good place for this cistern is under the central table: or a narrow cistern of slate may be constructed all around the front of the house just above a line of hot water pipes, by means of which the water is always of a suitable temperature for watering. If a cistern cannot conveniently be constructed, large tubs should be placed in different parts of the house and kept filled with water; these are also very useful by supplying moisture to the air by evaporation. Water should never be given on dull cold days, and very little at all in winter, except to plants in growth. During the growing season water should be freely administered, both at the roots and by the syringe, but care must be taken not to wet the young growth or flower-buds enough to cause them to damp off.

Twice a day will be often enough, however, in the hottest weather: once about eight o'clock in the morning and again about four in the afternoon. As a general rule, the house should be dried off by ventilation once a day.

Plants on blocks and in baskets should be dipped and allowed to become thoroughly soaked when in growth; but when at rest they should have only enough water to keep the roots and pseudo bulbs from shrivelling. If a syringe is used, it should

only be during the summer or growing season, and it should be so managed that the water may fall in a fine mist or shower over the plants.

We have said that orchids require a season of rest. In their native countries there is a period during which they can receive no water—the dry season. At this time the bulbs ripen and the plants are fitted for the production of flowers, and thus to ensure fine flowers, rest must be given for a season.

If the same heat is always maintained, and constant moisture afforded, the plants will continue growing, producing weak second growths and few and inferior blossoms. A ready way of securing this rest is to remove the East Indian orchids to the Mexican house during their resting season, that is, after they have perfected their growth, and to remove the Mexican orchids to the green-house. During the resting-season the plants may have more sun, and should always have a free circulation of air around them, being always mindful that cold draughts are injurious.

As soon as the plants again show signs of growth, they may be removed to their respective houses, where they will soon shoot into growth and flower.

When the plants are in bloom, the duration of the flower may be prolonged many days and often weeks, by placing them in a cool house, and being very careful that no water touch the flowers. The duration of the flowers of orchids is remarkable, many lasting in perfection from three to five weeks.

There are some East-Indian orchids, such as Phalænopsis, Ærides, Vandas, etc., which grow perpetually, but these should be removed for a season to the coolest part of the house and the growth checked somewhat, as in many cases if kept in too active growth the plants are injured.

The heat of the house must vary much with the different seasons, and in the different houses. The different degrees of heat required are well shown in the following table from an English work:

	Fahrenheit.			
East India House or Stove.	Day with sun.	Day without sun.	Night.	Morning.
Spring.	75	70	60	55
Summer.	85 or 90	70	65	60
Autumn.	70	65	60	55
Winter.	65	60	55	50
Mexican or Cool House.				
Spring.	70	65	60	55
Summer.	75	65	60	55
Autumn.	60	55	50	50
Winter.	55	50	50	45

Orchids should be kept clean. This is easily done by washing the pseudo bulbs and foliage with a bit of sponge dipped in very weak soap suds; care should be taken not to bruise the leaves.

The insects which infest orchids are scale, mealy bug, and red spider, and the remedies are the same adopted in green-houses for their destruction.

Cockroaches and woodlice, which devour the tender shoots, the young flower-buds, and the new roots, are easily destroyed by means of the old trap of a turnip or potatoe hollowed out; the insects seek the trap, and are easily destroyed.

Red ants may be trapped in the same manner by an apple hollowed out and placed on the shelves. Cockroaches may also be hunted at night with a lantern. If the shelves are arranged hollow, so as to hold water, there will be but little trouble from these pests, as the water will prevent their gaining the pots. The plants should also be potted as before directed, by inverting a small pot inside of the larger one, which renders the drainage more difficult of access to the insects.

Within the last few months an entirely new theory of orchid culture has been promulgated in England, known as the "cool treatment," and thus far the practice has been so successful that if future experience confirms the probable facts, we may look for an entire revolution in the culture of this family of plants.

The main fact upon which this theory rests is, that orchids have hitherto been kept too hot, and that most species

may be grown and flowered successfully with no greater degree of heat than we ordinarily keep up in our heated graperies.

As yet it is too early to pronounce upon the complete success of the experiment, but the reports of English amateurs who have given the plan a season's trial are universally in its favor.

By maintaining a comparatively low temperature, most of the Mexican orchids, and not a few of the East Indian species have been flowered quite as successfully as under the former high pressure system. It is also worthy of notice that this experiment has been tried in heated graperies, where the main object was to secure a crop of fruit, which has been fully accomplished, and both fruit and flowers have done well. This discovery opens a new era in orchid culture; hitherto it has been deemed impossible to grow grapes and flowers in the same house without detriment to one or the other, but if we can, not only force our grapes, but with very little additional trouble obtain the gorgeous blossoms of the orchid family, the discovery is one of the highest interest both to the florist and horticulturist. The decreased expense is also a great recommendation, for the cost of orchid culture has always been a great obstacle to its successful prosecution. We propose, at an early day, to lay before our readers a full account of the experiments on this subject in England, to do which we only wait to ascertain a few more interesting facts.

To be continued.

OUR METHOD—NO. II.

BY PRATIQUER.

The grape culture according to "Our Method" is not a humbug—though we may be able to indicate practices connected with it that strongly point that way. Good plants can be purchased—probably as cheap as they can be raised, and we must be willing to pay a fair price for them, considering it a good investment at the outset. In this way, we shall to a great extent, eradicate the evil alluded to. As we are now ready to plant the vineyard, we have no time to raise our first plants, and we sally forth to buy them. Like the ancient Cynic, we seize our dark-lantern and seek to find an *honest* man to deal with.

The custom with tradesmen the world over, is to display the poorest quality first, and we patiently submit to an examination of the stock, wondering how any one could have the patience to cultivate, and the effrontery to exhibit for sale such miserable apologies for the grapevine. The merits of the *Invisible* whose tops are imperceptible to the naked eye, but are said to have *well ripened roots*—the compactness and lightness of the *letter-envelope*—the delicate and miniature appearance of the *knitting-needle;* and finally, the vigorous and wire-like properties of the *crow-quill* are dilated upon with an infatuation and impudence which ought to make a common, false-pretence-man blush. The plants, in the order named, represent inversely, the kinds sometimes offered for sale as No. 2, No. 3, No. 4, &c.; but would be much more truthfully expressed by the following arithmetical signs No. ,2 ,03 ,004 as representing the proportions they really bear to good No. 1, plants. The term "A No. 1" and "Extra" and "Special" are simple exaggerations intended to represent them greater than they are, and should be disused. Hyperbolic in description, and homœpathic in quality, are equally unsuited to grape planting?

There are but two grades of grapevines; number and select them as you will; one of which is worthy of cultivation—the other *is not.* Dealers who sell the latter in this age of intelligence, for vineyard culture, should be held to a rigid accountability before "an enlightened and intelligent

jury." Think of six years of one's life wasted before the injury can be ascertained fully, and *begun* to be repaired, to say nothing of original outlay, labor, interest and disappointment for which no money can compensate! It is quite time that this disgraceful traffic should be characterised by its true name FRAUD. But let us enquire if the penny-wise and pound-foolish planter, unwilling to pay the cultivator a fair price for his labor, may not be a party to the swindle? *He buys refuse plants to save money*, because they are *cheap*, and the nurseryman keeps "a choice assortment *to suit customers*." Is not the buyer then open to indictment by his wife and children, as much as if he spent his estate at the tavern or in riotous living.

The *Crow-quills* are the only one of the plants before named, that are to be tolerated, and even these should be cultivated and nursed another year or two before planting in the vineyard. We know of at least three vineyards, planted with these vines, not five per cent. of which survived the first season; and we must be permitted to enter our solemn protest against the sale and against any attempt to plant them, except in the nursery.

We need no experiment to test the longevity of the grapevine, like that of the eccentric Englishman, who bought a Raven to see if it would live seven hundred years! We know that we plant for posterity as well as for ourselves. So let us begin right.

Those who follow "our method" will buy none but the best (goose-quill) plants that can be procured for a fair consideration, feeling that the investment is as safe and productive as a seven-thirty.

Our preference is *first* for well ripened plants, grown from single eyes in pots under glass, as having the finest development of roots, and a growth and maturity nearly equal to two seasons in the open air. But we protest against the sale or purchase of pot-plants from green cuttings, until they have had a second years nursing.

Second—Layers from strong canes of ripe wood, the parents of which have been in the open ground upwards of two years; the new plants to be restricted to two or three from each cane so laid down; to be cut loose from the parent and each other at the end of the season; and allowed to *root on individual account another year before transplanting*. This is the only way that a layer can become as good as a pot-plant for a vineyard. Separation of a layer gives it a severe check—cuts off its original supply of subsistence and weakens its energy, if at the same time we transplant it the loss of power is too great to ensure its future vigor. Novices have a great desire to plant layers; they look at the *lead-pencil* canes as indicating early fruit bearing; force the plant to produce a premature bunch or two of inferior fruit, and thus destroy it. Such treatment in grape culture is rank heresy. Under no circumstances should the vineyardist allow his best vines to ripen fruit before the third Autumn, and then the clusters should be very few in number.

Third—Cuttings grown in mellow soil, to be at least two years old when transplanted; they are rarely fit to be removed at the end of the first Summer. The buds containing the rudiments of the future roots and leaves have a severe task to perform—exhausting much of their inherent power *to live*, and producing feeble roots and cane. If we add to this, the exertion to sustain life on transplantation, in a new situation, we may feel sure that we have a sickly plant to look after in the future, and need not wonder to find the mildew (*Botrytis*) one of its most familiar companions. This disease, of which we shall say more in its place *has its origin in the incipient cultivation of the grape*. No man should plant it in his vineyard; yet every cultivator does so, when he sets out immature, feeble or unhealthy vines. This is a matter of vastly more importance than many imagine, and we wish to lay great stress upon it.

Provided with plants of a *good quality* we proceed to cut the canes which ought to be of the size of a goose-quill at least, down to three eyes, only one of which is to

be allowed to grow, the other two being retained to form a top in case of accident. We also prune the roots of all dead portions, cutting-in long, straggling and injured parts with a sharp knife; but we caution the inexperienced against cutting off much of the roots—root-pruning may be overdone. An enthusiast in this line, will very soon reduce a good goose-quill to a letter-envelope vine, which is about equal to destroying it altogether. *Diminuendo* is a musical term, inadmissible in grape planting.

Before planting, each root should be immersed in clay and cow-dung, mixed so as to form mud that will stick to every root without fastening them together—these are then removed into a basket and immediately covered with wet straw or a damp mat, and carried to the vineyard; the air is thus kept from the roots while the planting progresses, and the mat prevents their drying in the sun. The places for each vine having previously been indicated by a peg from the basket, and the holes dug two feet across and one foot deep, in well prepared soil, we first fill in a mound of earth in the centre and holding the plant in the left hand, place it carefully, spreading out the roots, pointing diagonally downwards with the right hand, while the assistant sprinkles in mellow surface soil enough to cover and retain the plant in position. We then proceed in the same manner until the whole are planted, and then fill the holes to the collar of the vine, which should be three or four inches below the surface; the remaining space is left to be filled up the following Autumn.

We sometimes think that instructions in grape culture should be of a negative character—that what *not to do* is most important to cultivators. The newly planted vine must *not* be moved after it is once placed and covered. It must not be planted in wet weather, nor in wet ground, nor covered too deep. Probably the greatest error committed by planters is this. We were lately called on to sympathise with a friend who purchased eight hundred good plants two years ago, which he said did not do well, the cultivation was correct, but they died; and we could find only thirty-four plants out of the whole number living. *They had been planted too deep.*

Having planted our vineyard, say in November, 1864, or in April, 1865, we propose to "let it alone" the first Summer, except to tie the canes as they grow to a stake set at the time of planting, and cultivate parsnips, carrots or potatoes, between the rows, keeping the ground mellow and free from weeds. After the canes have become fully ripe, we cut them down to three eyes, about the first of November, 1865. We then spread about them coarse litter from the barn-yard, (to be dug in next Spring,) and raise over them a mound of earth, taken from between the rows, several feet distant from the plants, this protects them during the first Winter. We consider the vine in this condition, as yet in its infancy—still requiring tender care, having had the double duty to perform—to live and to grow. If it has survived, it may be supposed to express itself in the language of the Freedman: "If I lib troo dis Winter, I lib alway." This treatment is suited to all the States north of the Potomac, and is not unworthy of consideration among "our wayward sisters," whom we yet hope to see living in a restored Union, under their own vine and fig tree, with none to make them afraid.

It is now proper to settle the *age* of our plants, so that we may clearly understand what is meant by the first year, second year, &c., and thus avoid confusion and misinterpretation of our meaning. We frequently hear plants spoken of as four and five years old that have been set out but a year or two. All grape vines before planting, whether one, two or three years old, are reduced to the condition of one-year-old plants when removed, as they are cut down to three eyes and are subjected to the same treatment. But when they are re-planted they are reduced again, and are to be rated as commencing life from

thenceforward, except that vines planted in the Fall of 1864, are rated the same as those planted in the Spring of 1865, becoming one year old in the Fall of 1865, and so on. Thus, after the ripening of the wood and fall of the leaf, in the Autumn of 1866, they are two years old. If planters will remember this they will better understand the directions given for the culture of the vine.

As yet we have said nothing of the kinds of vine to plant. On this point we shall doubtless "knock noses" with some of our dear friends, whose speciality runs on other varieties—even at the risk of a newspaper quarrel, a modern improvement in advertising, neither original nor patentable, but much in vogue of late. Having no grapevines or opinions for sale, we shall fearlessly do our duty, even if we have to take our National-Premium Catawba *privately* with Messrs. Z. Y. & X. A very sensible writer in a late number of the *Country Gentleman* sets down the quality of grapes for eating, in order, thus: Allen's Hybrid, Delaware, Diana, Creveling, Rebecca, Concord, &c. We divide our vineyard into three parts, distinguished by the color of the fruit, and give our preference, for the white or green, to the Allen's Hybrid; for the red, to the Delaware; and for the black, to the Creveling; these are without doubt, at the head of the list, and will be for many years to come. When either is superseded by a better, we shall welcome it with open arms.

GRAPE CUTTINGS FROM HISTORY.

BY JOHN S. REID.

Noticing the very handsome compliment which the Editors of the Horticulturist pay to themselves and the contributors of the January number, in the Editors' Table, I could not do less than, as one of its contributors, look round for a new theme to write upon, which would of itself sustain the eulogy of the compliment, and afford amusement if not instruction to the numerous readers of the journal, hence the heading of my present article, believing that my *own* experience would not supply the demand.

The history of the past is like a beautiful stream on which may be seen the actions of a by-gone world, where resting on its bosom are seen the flowers and weeds of life—where the bud, the blossom, and the fruit may all be found grouped together; and where the sweet and the bitter may be found side by side, labeled and marked in the nicest order.

When a boy, I was often astonished at my own want of knowledge of the beauties of creation, and especially of the vegetable world—and since I have become a man, my ignorance outcrops at every point of my investigations, like the geological formations of a former world.

Having no training in my early youth as a Horticulturist, I have often had to grope my way in the dark, relying upon the opinion of some other, who pretended to know all that I wanted—but whose knowledge, when tested by the light of science, proved to be utterly incompetent to give the advice required; hence I examined the silent, but instructive mementos of the past, and now send to you, what I call—"Grape Cuttings from History," as the result of my labors, hoping that they may prove instructive to those who are as ignorant as I was; not intending them for those who may consider themselves the "Masters" of Horticultural Science.

I like the idea presented by Mr. Fuller in the January number, where he ruminates as one may term it, over the glorious hopes and fond anticipations of his seedling vines; for I well remember how

anxiously I have watched the first development of the young germ as it burst from the seed envelope and shot out its tiny thread to the sun and air; how each morning and evening I had examined it again and again, until the blossom would appear on the vine, and the fruit clusters hung pendant to the ground—then how anxiously did I look for the coloring process, whether white, green or red; and then, when the fruit *should* have been ripe, and luscious to the palate, how disappointed, to find it "sour as grapes." All this I have felt and experienced, and can well mourn with him over his lost anticipations; whilst continuing in the fond attempt of obtaining something that yet may repay all my experiments.

But enough of this for the present, and let me hasten to my "Grape Cuttings" for fear they, like many others, get dry before planting.

The earliest account we have of the cultivation of the vine, is found in the sacred text; for which see Genesis, 9th chapter, 20th verse. "And Noah began to be a husbandman, and planted a vineyard." Now we are not informed as to the kind or quality of the grapes he planted, but they were such as made good wine; for the country in which Noah then resided is supposed to be near the city of Erivan in Armenia, a land still famed for its grapes and wine. This vineyard then, may be placed in about latitude forty degrees north, not far from the Black sea, and south of the Caucaussus mountains.

Methinks I see the ancient Patriarch standing on the top of Mount Ararat, and viewing the wide desolation of a deluged world. There on that lonely mountain, with his small family, he gazes over the wide waste of waters, as they gradually retire from the summits of the mountains, gather in the deep valleys—and roll away far into the gulf of the Mediterranean. By and by the dry land appears all around him, and he brings out of the Ark the seeds and plants and fruits which he had gathered before the great flood had poured its waters over the land, and he becomes a husbandman, and plants a vineyard on the slope of the mountain, and prepares to enjoy once more the luxuries of life.

Now we do not pretend to know the *kind* of grapes that he planted; although some ancient writers contend that *they* do; but we will suppose that they were the choicest and most delicious known to the antediluvian world—and we may fancy that he selected the white grape of Kishmish, the golden colored Mahoni of Cushbin, and the royal black Shiraz, of Samarcand. Or in gathering his treasures, he may have come across some of the finer grapes of ancient Egypt, such as the gray Tarniotic, or the rich and aromatic Meroc, which long afterwards Cleopatra presented to Cæsar at the feast of roses, and from these filled up his collection. It is true, some writers contend that Adam knew all about grapes and wine, and that among the several fruits created by the Almighty, the grape was one of the first; whilst others assert that Adam knew nothing of either, else Noah would have known the effect that wine would have had on him, and not drank to intoxication; but this, like a great many other things, connected with ancient history, must remain in doubt, although my own opinion is that Noah was personally well acquainted with the Vine, prior to the deluge; and therefore very soon after, he planted the vineyard spoken of in Holy Writ.

Perhaps there is not another plant or shrub that claims so great an antiquity as the grapevine. Among the ancient writers of profane history, some assert that Osiris introduced the art of making wine into Egypt, whilst the Greeks claim that Bacchus was the father of this glorious beverage; but it is evident that the Egyptians were well acquainted with the use and properties of wine at least fifteen hundred years before the birth of Christ; and if we take the historic account of Joseph's dream, as found in Genesis, as an evidence of the cultivation of the vine—then the Egyptians were vine-dressers at least eighteen

hundred years before the Christian era. The chief vineyards of the Egyptians were planted on the banks of the Nile, although grapes are found on the shores of the Levant, the wine of which is of excellent quality, of a delicate perfume and an agreeable sweetness. The Chinese also claim precedence in the cultivation of the same—and refer to their ancient records for evidence of this fact; so that if they are to be believed, vineyards were under cultivation at least one thousand years before the birth of Christ.

The Chinese generally put their wine into pitchers, under ground for keeping—and several provinces of this Empire are celebrated for their grapes, wine, and raisins. History does not inform me of the several kinds in use in the vineyards of the Celestials, hence I cannot say whether they rival the celebrated vines of Europe or not; but it is evident that the quality must be good—or the raisins and dried grapes, which are largely sold and used by them, would not hold the rank they do among their historians of ancient and modern times.

Here my scissors begin to inform me that they are getting dull, and that I have cut enough with them for the present; and being afraid that my researches *may* not be so interesting to others as to myself, for the present I will close with a promise to continue them if found either instructive or amusing.

Cuttings from Home.—For the past two months Winter has held this part of the country in his chains of ice and mantle of snow. The weather is extremely cold, and I am afraid that our finer fruits are seriously injured—for the snow is of that quality that falls in the nature of sleet and mush-snow, clinging to the vines and branches and destroying the buds.

But the world is full of pleasure and happiness, for I hear the merry laugh of youth mingling with the music of the sleigh-bells—notwithstanding the inclemency of the weather. So in patience we must possess ourselves, waiting for the glorious sun of April and May, when the young buds will awaken, and the song of the turtle will be heard in the land.

Fayette Co., Indiana, Jan. 22, 1865

NOTES, Etc. ON JANUARY NUMBER.

In Mr. Buchanan's remarks on the Grape he says, little wine is made from the grape grown on the shores of Lake Erie. To a certain extent his remark is correct, as is almost everything of Mr. Buchanan's writing, but while this shore has now about 4,000 or more acres in vineyard, the quantity of wine made will probably average over 400,000 gallons, or over 100 gallons to the acre. Some vineyards do not sell any of their fruit for eastern shipment, and others again sell all of their fruit to parties who buy only to make it into wine.

Page Grape.—Will Mr. Reid give us a full description of this grape, its time of ripening as compared with Isabella or Catawba; size of bunch and berries; hardihood of vine and where it is grown, except his own grounds.

Iona Grape.—Mr. Fuller says color and *size* similar to Catawba. He must have had some stimulating *Mead* in his spectacles when he saw the fruit, or the Ionas shown him must have been different from any the writer has seen. Two-thirds as large as Catawba and not an average of quite two berries to three of Catawba on the bunch, is about all that Iona will stand, as shown by those most interested in its present dissemination.

A White Grape.—Mr. Fuller should try "Lydia," and he will find the desideratum he asks for, and which is to ensure the grower a fortune. Had this grape emanated

from the East it would long ago have had a first place, but unfortunately it started at the West, and it takes about ten years from the time a fruit is noticed at the west before some eastern fruitmen can recognize it.

PRATIQUER—in speaking of wine making, evidently loses sight of the acids in the grape. If he will look that matter up carefully he will find it has as much or more to do with wine making than the sugar. What is now wanted is a simple instrument to detect acids as the Saccharometer does the sugar. E.

GRAPES IN ILLINOIS,

BY J. T. D.

To the writer of this article, in common with many other grape culturists, the past season has developed much in relation to the Delaware, which for many years has been enshrouded in doubt, if not altogether veiled in obscurity. Some fifteen years ago a few vines of the Delaware came in my possession, and fruiting some three years later, their high flavor, added to the most unexceptionable general good quality of the fruit, arrested my particular attention, and led me at once to the conclusion that it could be no other than a foreign plant whose habit and constitution had accidently, or otherwise, found congeniality of soil and climate in its transatlantic home. The wonderful hardiness of its vine, and its early ripening, caused me, the second year of its fruiting, to plant all the seeds which from their well ripened condition I inferred, would answer the end I had in view. From that period till the last summer, these seedling, so numerous as to excite the wonder, (and perhaps a feeling less creditable to myself,) of nine tenths of all those who were in the yearly practice of visiting my grounds, have received my constant care, and attention; cuttings, and layers were often taken from the most promising, with a view of sooner getting specimens of their fruit, and at the close of each year they received the usual winter protection given to all my vines. During the last summer, all that were not previously discarded as worthless, have fruited in abundance, producing many varieties of size, and some variety of color, but almost invariably of a uniform native flavor, in which not the slightest trace of the foreign grape could be discovered. Three fourths of all these seedlings had the leaf green above and smooth below, of the "Clinton" and that class. Of the wood the same tough, close short joint which belong to the parent, appeared in many. Among them all, there was not one which in point of merit as a table grape approached the Delaware. There are but three or four of equal merit with the Clinton and one of these I cannot, without difficulty, distinguish from this grape. The time of ripening, size, color and flavor of the fruit, as well as its general habit of vine and leaf being well nigh identical; another remarkable trait of these seedlings is their almost uniform dark color, having all varieties of black, blue black, with and without bloom, not over a dozen being of the pale green of the golden Clinton, and not more than fourteen approximating to the color of their parent. All those which fruited first, or earliest, are the least promising grapes; those that did not fruit till last year are of a class decidedly superior, though not enough so to make it an object to propagate from them, with any view of introducing a grape worthy of general dissemination. Now, if the reader will bear in mind that the fruit from plants of the seeds of Allen's hybrid closely resembles either that of its foreign or native parent, sometimes like the hybrid partaking of qualities of both parents, and that the seeds of all the foreign varieties planted out doors or such as will survive out door cultivation till fruiting, show beyond all

question not only their foreign origin in taste, size, color and flavor, but also their utter inability to withstand the severities of our climate, he will with me arrive at the conclusion that the Delaware is a native, purely a native, having had its origin north of the isothermal line which limits the growth of our southern varieties and probably somewhere near the northern limit of the vine culture. I have often read in the writings of our amateur pomologists, and heard it asserted, that the Delaware has, by cultivation changed its original quality, and greatly improved; this of course can not be strictly true of any vine or tree, for the cutting or graft must always be precisely the same in all its constitutional properties and conditions, as the stock from which it is taken, but no doubt can exist in the minds of any that difference of soil and of climate and of cultivation may produce a difference in the fruit, and an improvement so great as to make it difficult of identification; but which improvement is immediately lost upon recurring to the ordinary mode of cultivation, and can not be maintained by graft or cion of the so improved variety. Now, the past summer has been one peculiarly adapted in my latitude to the growth of the vine, and the full developement of its fruit. The month of July had five days in succession of lower temperature than my record shows for the last fourteen years. The mean temperature of this month having been 76º or 6 degrees lower than its average mean for the last six years. During all this month the prevailing breeze was from the north coming over Lake Michigan, and the atmosphere during the whole summer was unusually dry, clear, and pleasant; the mean temperature for the month of August did not materially differ from the average for the past six years, while the average mean for the month of September was two degrees lower than that of former years, and on the 8th of October we had a a frost which effectually killed all vine leaves. This unusual warm Summer for this latitude, hastened forward the ripening of all the different varieties of grapes, so that on the 6th day of September I I was enabled to place before my family and friends, grapes of the Delaware fully ripened and matured. The Delaware opened its leaves on the 9th day of May, thus from the time of its foliation to the time of its ripening on the 6th day of September, a period of 119 days had elapsed, nor has it with me for the past twelve years required a longer time than one hundred and forty days in which fully to ripen its fruit, while its average days of growth from foliation to ripening, exclusive of this year, have been 136 days. My meteorological tables as well as my observations of the times of leafing, coming into blossom, coloring, and ripening, of the different grapes grown by me are full and accurate; my location is on a warm sandy alluvial 22 miles south of Chicago where the winter extremes are so great that I deem protection during its season of hybernation important. Nor should this last labor alarm any one who meditates the planting of a vineyard, as in one day myself and man can cover one acre of vines. This article, already too long to interest you or your readers, I cannot dismiss without again alluding to the quality of the Delaware, no foreign grape compares with it in any quality except size, and this I do not consider essential, no native grape as yet known can dispute place with it. It is our hardiest grown grape, the Clinton alone excepted. From no one vine can more fruit be obtained when all its requirements are fully known and complied with. These you have so often and fully given to the public in your excellent journal, that I forbear mentioning them. Of the recent disputants for public favor I shall say but little; I hope the Iona and Adirondac will prove all that their friends claim for them, though fruiting them the past year, will not yet undertake to place them according to their merit. The Diana is second in my estimation to the Delaware, the Rebecca close by, and the Concord is a grape that I would not be without.

LIFE AND DEATH IN THE FRUIT ORCHARD AND FLOWER GARDEN.

BY W. A., POKEEPSIE, N. Y.

Winter is the death of vegetable life. Spring is its resurrection. The whole land is now a vast cemetery, waiting the warm rain and the revolving season to bring bud and blossom again into being. What a beautiful process is it all! what countless agencies are now at work beneath the earth's surface, to accomplish these vast results! The summer is past. Autumn has ceased to exist. Winter is spread now like a pall over the land. What a retrospect of loveliness and beauty the season of fruit and flowers offer! What splendid results are seen in the full graneries and abundant harvests of our land.

Run the eye back through the season of flowers, and see the rich verdure which carpeted the earth and bloomed in luxuriant foliage on the trees. How changed now the scene. The earth cold, and its surface dreary and forbidding. Trees with their leafless branches, now lean in dreary loneliness against the sky, adding gloom rather than beauty to the landscape. Then the rose, and the lily, and honeysuckle, and countless other flowers, perfumed the atmosphere and decked the garden with their beauty. Where are now all these exquisite objects of loveliness, with their fascinations for the eye and the senses? They are dead to the sight, but with the return of spring, they will live again.

What once so deliciously gratified the tastes in dainty fruits, during summer and autumn, have all disappeared. Where the luscious strawberry, the delicate peach, the rich cherry, the melting pear, the grape clusters, with their delicious flavors and savory juices, so coveted by fruit amateurs? All have gone out of sight. None are to be found on bush, or shrub, or vine, or tree! They are apparently all dead. Will they live again? As certain as there is truth in God's word. Seed-time and harvest are both promised. They will never fail. Those of us who survive the winter, will see the spring flowers. Those who are alive will behold every kind of delicious summer fruit again. This is the great decree of the Infinite mind. It will never cease to be verified.

Already there are symptoms of the stupendous vegetable resurrection, which precedes spring, and anticipates summer. The great process is in progress in the bosom of the earth, and already buds begin to smell. The early crocus, and jonquil, and lilly, and tulip are eager to pierce the soil with their spikes and show their blossoms. They will hardly wait the passing away of the snow-pall or the cold of winter. Buds are formed and preparing for an early spring start. Beautiful provision is made to protect these precious fruits and flowers from destruction. See that tiny bud folded in a strong case of tough covering, which the frost cannot penetrate, but which the warmth of spring readily opens! In that is the principle of vegetable life, and while it is nourished by the juices of shrub or tree, its warm envelope shields it from the cold, and keeps it ready to spring into existence. Thus, while vegetation sleeps, its germs are vitalizing.

Decay is thus seen following fruit-life and flower maturity. Succeeding this is the repose nature needs, and then comes her recuperative powers and processes. Beneath the earth's surface they also are at work in myriads of roots and countless seeds and germs of vegetation. What a laboratory! How wonderful and varied the chemical combinations of soil to produce fruit, flower and vegetable life. How strangely mysterious the process by which the lilly is made to yield fragrance, the rose painted, and the peach and strawberry to give their matchless beauty and flavor! What endless form to buds, color to flowers, and taste to fruit pervades even one acre of garden soil. How faultless the tints, and fragrance, and color embodied in an exten-

sive estate, even in some horticultural grounds. The stars are infinite in number as the sands on the sea shore. Even more countless are the buds and flowers now preparing to be restored into life, with the warmth of spring.

Happy is the floral retrospect of summer's foliage and autumnal fruits and flowers. Even more delight is perspectively shadowed in looking to the opening season of a reviving floral world! How the true lover of nature yearns for the opening of spring, the song of birds, and the first flowers and fragrance! How delicious the early frog-peep. How welcome the crocus, or snow-drop, or violet. How refreshing the pure breath of spring, and how eager is greeted the first warm shower which starts into life a mass of sweet buds and fragrant blossoms! Who has more exquisite or simple pleasures than the resident of the beautiful country. Who has cause for higher gratitude to God than he who dwells around blossoms and fruits and fragrant flowers.

NATIVE GRAPES.

SALEM, MASS., January 27, 1865.

MESSRS. GEO. E. & F. W. WOODWARD:—I read the article on Roger's Hybrids in your HORTICULTURIST to which I am a subscriber. Mr. Fuller evidently knows but little about them, or has seen wrong or very poor specimens. No. 3, though very early and fine here, is not considered equal to No. 15, which as grown here last and previous seasons was pronounced superior to every other sort grown in equally favorable circumstances. No. 4 is also thought fine and is very large and showy, but the 15 was exhibited at some of the County Exhibitions about here last year, and was given the highest premium for an out-door grape, where the much-praised Adirondac and Delaware were on exhibition. At another place, (Amesbury,) it was exhibited where the Adirondac was also present, and the No. 15 was called much the highest flavored grape, as you will notice by the enclosed analysis which I send you. It must be from the amount of sugar and acid it contains in comparison with Adirondac, which was grown much farther south, and ought to be richer in sugar. Mr. Bailey in his circular must be mistaken in his estimation of it, when he pronounces it a good wine-grape, and superior to any Hybrid &c. You will notice that it has far too little acid for a wine-grape, and not enough sugar.

Yours truly,

EDWARD S. ROGERS.

P. S.—You will notice that the Delaware stands a little the highest, Nos. 15 and 4, next; but one of the specimens of Delaware analyzed, grew at Norwich, and the others were the best and sweetest that I tasted among many vines that ripened fruit in this place last season, and were partly shriveled and dried on the vine. This may account for the difference between the amount of sugar found in the Delaware by Dr. Wetherill of the Agricultural Department, Washington, and published in their report 1862, page 510, where he calls it 13 per cent.

The above experiment can be relied on as correct, as several trials were made from the same grape, and Mr. Balch is considered as capable of doing any thing of this kind, as any one in the State. He was a graduate of the Scientific School, Cambridge.

E. S. ROGERS.

MARCH, 1865.

NATIVE GRAPES, BY D. M. BALCH.

(From the proceedings of the Essex Institute, January 23, 1865.)

It has been proved from numberless trials and disappointments extending over a long course of years, that the wine grape of Europe (*Vitis vinifera*) cannot be cultivated in the States east of the Rocky Mountains, with success, except under glass, both fruit and wine in open air culture, being sooner or later destroyed by disease, even in latitudes where the fruit would otherwise be perfect.

This much to be regretted failure is due neither to the cold of winter not the heat and aridity of summer, but probably to the great and rapid fluctuations of temperature peculiar to these States; for on the Pacific coast where the climate is far more equable, most European grapes flourish luxuriantly, and the bearing vines of California now number millions.

Such being the case, we in the East must turn for our table fruit and wine to the various indigenous wild grapes, (*Vitis labrusca, æstivalis, &c.*) healthy and hardy plants, which grow spontaneously, varying in kind with the climate, from Maine to Texas. The fruit of these wild vines is in most cases of the very worst quality, being acid, astringent and of a peculiar musky odour and taste, the so-called foxiness; but that horticultural skill and patience, by which have been elaborated from the common choke-pear all our well-known varieties, approaching perfection in quality and ripening throughout the entire year, is being applied to the wild grape, and the results of the few past years are astonishing. The goal of perfection in this case is still far distant, but we have many good and some excellent varieties; and the number of these is being yearly augmented, so that it is by no means improbable that many grapes, hitherto popular, will be gradually discarded as others of better quality or habit arise to fill their places: I refer to the Isabella, Catawba, Hartford, &c., in all of which there is large room for improvement.

To be of value as a table fruit or for wine, a grape must contain a sufficient quantity of free acid, and sugar enough to temper, modify or partially disguise this acid, so that the juice shall not be flat and insipid but vinous and sparkling. In the case of table grapes the minor considerations of size, beauty, flavour, thin skin, deficiency of central pulp, &c., are of great importance, but the first point to be ascertained in a wine grape is the quantity of free acid and saccharine matter it is likely to produce in favorable circumstances.

To ascertain which (if any) of the native grapes ordinarily ripening in this vicinity, was best adapted to wine-making, I have this autumn analyzed the fresh must of many varieties. I had also another object in view, viz.: to ascertain if the table adapted to Oechsles' must-scale, by Gall, from numerous analyses of European musts in 1851, '52 and '53, were applicable to the must of our native grapes.

The method of analysis in all cases was as follows: The grapes were gathered when perfectly dry, pressed, and the juice strained through linen. The specific gravity of this clear must was taken by weight in a bottle with perforated stopper; a portion of must was diluted with fifty times its bulk of water, and sugar contents ascertained by Fehling's method, ("annalen der Chemie," und Pharm. Bd. 72, S. 106;) this method is very accurate if carefully performed: finally the free acid in a weighed portion was neutralized by a solution of caustic soda of such strength that 1 c. c. equalled ·00825 grm. of Tartaric acid ($C_8 H_6 O_{12}$). All the free acid in must is not Tartaric, but in calculating results we can consider it so with small inaccuracy. The percentage results obtained are as follows:

Variety.	*Time of gath'g.*	*Sp. gr.*	*Sugar*	*Acid.*
Rogers' No. 15,	Sept. 5,	——	9·20	——
" "	" 26,	1·0783	16·47	·66
" "	Oct. 5,	1·0839	*17·90	·70
Delaware,	" 5,	1·0896	19·70	·70
"	" 5,	1·1021	20·63	·55
Hartford Prolific,	Sept. 26,	1·0721	15·01	·43
Concord,	" 26,	1·0615	11·83	·86
Adirondac,	Oct. 5,	1·0714	14·00	·28

Variety.	*Time of gath'g.*	*Sp. gr.*	*Sugar*	*Acid.*
Allen's Hybrid, (wh.)	" 5,	1·0780	16·20	·59
Union Village,	" 5,	1·0556	10·00	1·21
Rogers' No. 4,	Sept. 26,	1·0749	15·46	·61
" "	Oct. 5,	1·0819	*17·30	·65
" No. 22,	Sept. 26,	1·0723	14·86	·76
" "	Oct. 5,	1·0796	*16·70	·59
Clinton,	Sept. 26,	1·0688	13·77	2·40
Alvey (or Hagar,)	" 21,	1·0640	10·37	2·60
" "	Oct. 5,	1·0734	*14·70	2·02
Franklin,	Sept. 5,	——	8·77	——
"	" 21,	1·0610	11·20	2.16
Rogers' No. 3,	" 26,	1·0734	14·70	·66
" "	Oct. 5,	1·0749	*15.30	·47
" No. 19,	Sept. 26,	1·0680	13·65	·81
" " 1,	Oct. 5,	1·0665	12·60	·62
" " 9,	Sept. 21,	1·0680	13.41	·87
" " 9,	" 26,	1·0742	15·00	·57
" " 33,	" 26,	1·0572	11·70	1·01
" " 41,	" 26,	1·0749	15·63	·76
" " 30,	Oct. 5,	1·0630	*11·80	·84

The sugar per centage marked * in the table, were not obtained by analysis, but are Dr. Gall's for the corresponding densities.

From the analyses, native grapes would seem to be divided into three classes.

1st. Those in which the proportions of acid and sugar are well balanced, as Delaware, Rogers' 4 and 15, Allens' Hybrid, &c.; these grapes should yield good wine.

2d. Those in which the acid is deficient; for instance, Adirondac, Hartford, &c.

3d. Those in which the great excess of acid overpowers all else, and renders the fruit nearly uneatable, such as Clinton, Franklin, &c.

The analyses prove that Dr. Gall's table for Oechsles' must scale, can be safely used in finding the saccharine contents of native musts, the numbers obtained by analysis agreeing closely, in most instances with the tabular amounts for corresponding densities.

To produce a wine that shall keep, it is necessary that the must should contain at least 15 per cent. of sugar.

In Germany, the must of the best grapes (Reisling,) of the most favorable seasons, contains 24—28 per cent. of sugar, 65 per cent. of free acids; this yields the most excellent wine, and is regarded as the normal standard with which inferior musts are compared, and often made to resemble as far as possible by dilution and addition of sugar. This method of bettering the must of partially-ripened grapes, by which in bad seasons (total failures excepted) a wine can be made equal to the product of favorable seasons, is due to Dr. Ludwig Gall, who has published a treatise on the subject; an abridged translation of which may be found in the Patent Office Report, Agriculture, 1860.

To be of value for the production of wine, available for vineyard culture, a vine should be hardy enough to endure severe winters with slight protection; healthy and vigorous, so as to be little subject to the attacks of mildew, for it is very well known that a vine which has lost most of its foliage from this or any other cause cannot ripen its fruit. Injury from frost is little to be feared if the fruit be well ripened before its advent; the clusters should hang on the vine as long as the weather permits, and the ripest (better if slightly shrivelled) removed in three or four successive gatherings; they should be picked on a dry day and all defective berries removed. Many things influence early ripening, among which are soil, position, culture, variety and age of vine and crop adapted to its strength. The flavor of wine depends on the ripeness of the grapes and the proper proportion of free acids; this flavor is not present in the must but is developed during fermentation and the after preservation of the wine.

It might appear that undue preference had been given in these analyses to the "Rogers' Hybrids"; this is simply owing to the fact that these grapes, arising from the union of the wild grape (*Vitis labrusca*) with the Black Hamburgh, and retaining some features of both, are more largely planted in this vicinity than other varieties, and are consequently more plenty in their season.

It has been asserted that these grapes are not true hybrids, but only seedlings of the "Mammoth Globe," and contain no foreign blood whatever. Such a conclusion is diametrically opposed to the horticultural experience of a century. For it is a well known fact that out of a large number, say five hundred chance seedlings of any

fruit, but one or two at most will excel their parent; but these remarkable "seedlings," some forty in number, have not a bad grape among them, and are so far superior to the "Mammoth Globe" as to preclude all comparison. Their admixture of foreign blood is patent in the heavy clusters of fruit, so far pulpless as to yield 75–80 per cent. of juice, and the indigenous element recognizable in the health, hardiness and habit of the vine.

The chief value of analyses of grape must, lies in their repetition and comparison. The product of various seasons, climates and soils, should be examined. If this is done, we shall soon arrive at the grapes suitable for wine in different latitudes, and no doubt other important results. Those parts of the country lying on an Isotherm of 70°–72° for the growing months, June, July, August, and September, wherever the summer rains are not excessive, are best adapted to wine growing; for a mean temperature of at least 65° for the above months is required for the ripening of even the earliest and hardiest varieties of grapes. The average temperature of Salem and vicinity, as deduced from observations extending over 45 years, is about 66.5°, and several degrees above this can be gained in well cultivated and protected gardens.

The above analyses are imperfect, several prominent grapes having been omitted, but I hope to extend and improve the collection at some future time.

December, 1864.

CINCINNATI HORTICULTURAL SOCIETY.

Horticultural Rooms, 54 W. 4th. St.,
Saturday, January 14, 1865.

Society met. In the absence of the President Mr. George Graham took the chair.

The President elect being absent, sent his inaugural address, which was read and ordered to be printed with the minutes of the Society.

Mr. Clough, from the Committee with reference to the State Agricultural College, gave an account of the late meeting of the Ohio State Board of Agriculture, and their action and discussion on this important subject. He said that the project of attaching a mere "Professorship of Agriculture" to an existing university seemed to be almost abandoned, as people discovered that the subject was too important to be thus subordinated to any other, whatever.

At Mr. Clough's request, the Committee with reference to the Agricultural College was given further time.

Mr. Thompson, from the Committee to prepare a rejoinder to Mr. Yeatman's communication on "Grape-Growing, in this vicinity," submitted their report. They find that, though many vineyards have not been remunerative, yet this has been chiefly owing to a want of thorough cultivation. They also present some statements of crops for the past season, which place the subject in a totally different aspect from that given by Mr. Yeatman. After a slight amendment, the report was unanimously adopted, and ordered to be printed in the daily papers.

To the President of the Cincinnati Horticultural Society:

The undersigned, appointed a committee to prepare a reply to a communication of Mr. Thomas H. Yeatman, recently made to this Society, to the effect that grape-growing can no longer be profitably followed in this vicinity, beg leave to report.

Although Mr. Yeatman mentions the Catawba grape in his communication, he does not seem to discourage the culture of that grape alone; but his charge is the sweeping one that "grape-growing can not longer be profitably followed in this latitude."

Now, it is well known to our grape-growers that the Catawba is not the only variety of grape grown hereabouts; but that seve-

ral other well-known and well-tried varieties are in successful and profitable cultivation, both as a wine and table grape—among which are the Delaware, Norton's Virginia, Ives' Seedling, Concord, and others.

But, shall we give up the Catawba? Your committee says no! Try it a little longer. It *has* done well, and yielded large profits, and, in many vineyards, is still doing well.

We have not confined our inquiries to Hamilton County, but have extended them into Clermont and Brown Counties, as far up as Moscow and Higginsport, twenty-eight miles above Cincinnati, and we find on the slopes of the Ohio, above the Miami, the small German vineyardists who own and cultivate their vineyards, have been realizing fair crops every year except the last, and the past season many had half a crop. And from a careful examination of the vineyards of Hamilton County, taking the last ten years,—although some have been seasons of failure—the average yield has paid a fair interest on the investment when properly cultivated; and we have not found more than one grower of Catawba out of twenty who were willing to adopt the opinion of Mr. Yeatman.

It should be borne in mind that viticulture is yet in its infancy in this country, and that it is the opinion of some of our best cultivators that the rot will pass away with better culture. Even in the old vine growing countries of Europe the crops are not always sure. Their vines have seasons of mildew and rot; and a few years since their grape crops failed for a succession of seasons, from these causes; yet they had no thought, for this reason, of digging up their vineyards and "planting locusts."

Successful grape-growing requires good culture, and your committee are of the opinion that lack of good culture in this vicinity has been one of the causes of poor success.

It is well known that Mr. Yeatman's vineyard is one of the oldest in this country. It is planted on a steep side-hill; and the good soil has long since washed off. No manure has been applied, and your committee are informed that for some years past it has not been cultivated, but very much neglected.

We beg leave to suggest to Mr. Yeatman the treatment that was recommended many years ago for the barren fig-tree of Scripture—"dig about it and dung it," and he will get better crops.

But, as we have already said, there are other varieties of grapes being successfully grown in this vicinity, which Mr. Y. seems to be ignorant of, and we have extended our researches to some of those vineyards, and give the results as follows:

Ives' Seedling is a grape of much promise; not addicted to mildew or rot. Colonel Wahring, of Indian Hill, in this county, has a small vineyard, only two acres in bearing, which made the past season 650 gallons of wine. The season previous, only one acre being in bearing, yielded 560 gallons. The Colonel makes his account for the past season's business stand as follows:

650 gallons Wine, sold at $4 10....	$2,665
Sale of Cuttings	1,500
	$4,165
Deduct cost of taking care of Vineyard	100
Leaving the net product of vineyard.	$4,065

or over $2,000 per acre.

Norton's Virginia is another promising grape, that is being considerably grown hereabouts.

The Messrs. Bogen have given us their figures for the product of this grape, as follows:

1863, from 1½ acres—first year in bearing—they made 500 gallons, sold at $3.....	$1,500
Sale of Cuttings.....	400
Sale of Roots from layers.....	800
	$2,700
Deduct for cost of culture.....	100
Leaves net.....	$2,600

or $1,733 per acre.

1864—Yield of same and cuttings for same $2,300
or about $1,500 per acre.

Delaware is another grape of very great promise and profit, now being extensively grown throughout the country. The Messrs. Bogen from one-third of an acre—first bearing year—give us the following figures for the past season:

87 gallons of Wine sold at $6 per gallon	$522
Sold Cuttings.....	450
Sold Roots from layers.....	$2,050
	$3,022
Deduct cost of culture.....	22
	$3,000

or $9,000 per acre.

Mr. J. E. Mottier gives us as the result of his Delaware Vineyard for the past two years, as follows:

1863—From one and a half acres:

165 gallons of wine made and sold at $5 per gallon.....	$825
Sale of Cuttings	$1,630
	$2,455
Deduct expenses.....	200
Leaving net.....	$2,225

or $1,504 per acre.

1864—From the same vineyard, made:

200 gallons of Wine, at $6 per gall.	$1,200
Sold Roots from layers.....	1,835
Sales of Cuttings, two years.....	2,360
	$5,395
Deduct expenses.....	200
	$5,195

or $3,562 per acre.

Mr. Mottier says he might have obtained a larger yield of Wine, but his vineyard being young, he would not allow it to overbear.

Your committee, therefore, take pleasure in submitting the foregoing facts in refutation, in part, of the loose and reckless statements of Mr. Yeatman, and take this method of entering their protest against the same.

E. A. Thompson.
John E. Mottier.

Mr. Klippart presented some volumes of the last "State Agricultural Report" to the Society. On motion, the thanks of the Society were tendered to Mr. K. for the same. Society then adjourned.

George Graham, Vice-President.
R. H. Warder, Secretary.

RECOLLECTIONS AND NOTES ON FRUIT CULTURE IN THE WESTERN STATES.

BY FRANK R.

Looking back twenty or more years on the condition and progress of fruit culture in the Western States, there is much to encourage and stimulate to increased and progressive action — much to feel grateful for toward those termed enthusiastic in fruit matters, and some little to induce caution and careful thought, combined with experimental practical knowledge in its continued pursuit.

Twenty or more years since, the names of men whose enthusiastic love of the subject led to the introduction and trial, and gratuitous distribution of choice fruits, were but few, and they widely spread over the whole Western States. Then there were no railroads, and even the dirt-roads for teams were almost impassable during the season for transporting trees and plants. Then there was, comparatively speaking, no market for the sale of fruits, and a few extra baskets, during the seasons of perishable fruits, as cherries, strawberries, peaches, etc., would glut the market, and

the owner would be glad to have people take as a gift that which should have brought him money. It is since the introduction and construction of railroads that now cross and recross these States, that fruit-growing has become a matter of thought or practice beyond the supplying of one's family.

True, occasional orchards were then found from which the owner looked forward to receive income from the sale of its fruits, and near the principal cities some attention was given to growing strawberries, etc., for marketing; but as a rule the apple orchard was designed for the use only of the owner, while a cherry tree or two, one or two wild pears, some seedling peaches, and a few currants, comprised the usual supply of fruits around and on most homesteads. Now, we can hardly ride five miles in any direction throughout the West without seeing large orchards of apples evidently designed as a resource toward the support of the owner; and wherever the peach succeeds, orchards comprising trees by the thousand are found, and pears on the quince roots, cherries on mazzard and mahaleb roots, are abundant in nearly every garden or yard, no matter how small. No longer does the resident of the West seek his strawberries, raspberries, etc., in the fields, but a portion of ground is set apart to their culture, and when not near enough to a paying market, the surplus is canned. In earlier days, after a certain time of year, dried apple sauce or apple butter was the only thing in fruit form found on the table, whether rich or poor; but now, since the advent of canning, fruits of all kinds are found on the tables of all from one year's end to the other, in season and out of season.

To this change we are indebted partially to the general diffusion of knowledge, partially to the cupidity of man in seizing hold of that business which promises profitable money returns, but more to the continued and unwearied labors of enthusiastic fruit-men.

Had it not been for the love of fruit-culture and its practice in the hands of enthusiasts, together with the Americanism o telling all they knew without compensation, we should have still been growing and eating the old Cat-head, Norfolk Beaupin, Milam, or other third-rate apples; — we should yet have been contented with the old black and white heart cherry; with trees of Kentish for our pies: we should have continued to regard the planting of pears as one of the things to be done for the benefit of coming generations; and in so doing have confined ourselves to old Summer Bonchretien, Jargonelle and Pound. We should have gone on to grow seedling peaches, and continued to gather our strawberries and other small fruits in the fields. To enthusiasm in fruit-culture, in however few bodies it may have been, we are greatly indebted; and every enthusiast deserves a vote of thanks from the whole people. (Let us give him one.)

In the prosecution of fruit-culture at this time, and looking forward, there are many things that render careful consideration of the subject actually necessary to insure success. In earlier days, before the country was much cleared up, and when the humidity of the climate was greater than at present, there was little or no difficulty in growing both tree and fruit in perfection; but as the face of the country has been denuded of foliage, and the transportation of trees from the eastern states brought us all of their variety of insects, the grower of fruits must now seek such positions as from the surroundings offer the best success as regards climate, and in order to ensure success, give constant and unremitting attention and culture.

As we have remarked, thirty years or more ago it mattered little where the apple or peach orchard was planted, whether on hill or in valley, near large bodies of water or far from them. Successful results were the rule and not the exception. At this period the rule is reversed, and the planter of fruit-trees or vines needs to look about him carefully and make a judicious selection of his location if he expects to realize any profit from sales of fruit. Whatever may

be advised, and however good such advice relative to fruit-culture, so far as the wants of a homestead are embodied, it must be conceded that the fruit-growing station is a comparatively limited one, looking at it in a business view.

Thirty years ago the collection of varieties of apples, pears, etc., at the West, numbered only dozens; now every variety known is in culture, and many varieties of apples utterly unknown to Eastern fruit-growers. Progress has been rapid, and while the New England fruit-grower has planted his hundreds of apple-trees, the western orchardist has planted by the thousand. Knowledge of varieties has kept pace also with extent of cultivation, and as Ohio opened with the first State organization of a Pomological Society for correction of nomenclature and comparison of sorts, so each additional western State has taken up the ball and kept it rolling, until now Michigan, Indiana, Illinois, and Missouri each have State organizations, the members of which are devoted to the study and advancement of the knowledge of pomology.

Although the apple, from its comparative hardihood, freedom from blight, productiveness in almost any and every locality, and the advantage of its being kept for winter sales, has been the leading fruit grown, yet the south shores of Lake Erie, the eastern Shore of Lake Michigan, Southwestern Kentucky, Southern Illinois and Indiana, and numerous high hilly inland points, have their peach orchards, rivalling, if not surpassing those of New Jersey or Delaware. Without making as much show or noise about pear-growing as some points in the Eastern States, yet the West has already its dwarf pear-orchards, numbering from five hundred to as many thousands each, and one planter recently told the writer he had thirty acres entirely planted to dwarf pears, now out two years. In the culture of grapes, thirty years since, with the exception of the vineyards of Mottier, Buchanan, and Longworth's tenants, little was known in the western States, and little thought of beyond planting a vine or two of Isabella, Clinton, or Catawba: the latter only in the southern portions of the States. Then the above-named grapes, with, perhaps, the Elsinboro, Lenoir, and Herbemont, were about all that was known, and the Isabella counted as good as could be desired. Now, the culture of the grape is with every land-holder to the amount of eight or ten vines, and from that upwards to the extensive vineyards of Cincinnati, the islands and south shore of Lake Erie, Southern Illinois, and Missouri—numbering probably in all over ten thousand acres, legitimately as vineyards; and the varieties that twenty years ago were most in favor are now entirely discarded. As before remarked, thirty years ago the Isabella was the maximum of out-door grapes. Now, who does not know of the delicacy and sprightly richness of Delaware, Allens Hybrid, etc., etc.; and who thinks of eating Isabella when these varieties can be obtained?

Thirty years ago, it was rare to find any variety of the cherry, except black or red Mazzards, and the old Kentish or Pie. Some few parties, it is true, had, as early as 1816, introduced and planted some of the old varieties, such as Black Heart, Yellow Spanish, etc., but the trees were not usually found around the homesteads of the people, except as above-named—viz., the Mazzards and Kentish. Now, not only is the cherry-tree found in large orchards, especially for market purposes, but there is hardly a house throughout the country that has not more or less of cherry-trees of the best varieties surrounding it. What a change, too, in varieties! Most of the sorts regarded as the best thirty years ago have been superseded, and the varieties originated by Professor J. P. Kirtland, of Cleveland, Ohio, have taken their place. The old Kentish, although often found, yet it is only about one in twenty to thirty as compared with Early Richmond, Louis Phillip, and Hortense. What I have written of the apple, peach, etc., may also be said of the smaller fruits, but as I fear I have already said more than will be agree-

able to any but an enthusiastic lover of the subject, I forbear.

At another time, if desired, I will point out some of the most desirable localities for fruit-growing at the West, and the varieties that promise the most money returns. As I have already said, although fruit-growing is comparatively a pursuit in which every owner of land is engaged, there are really comparatively few localities where success from year to year may be regarded as the rule.

LETTERS TO JOHN.

BY UNCLE SILVINUS.

DEAR JOHN: Now that you have really become settled and commenced the nursery business, I will endeavor to redeem my promise and occasionally give you such advice and direction as I think will be of benefit to you.

I hope my dear nephew that you will not think me impertinent if I should write very plain, and probably I may sometimes tell you things that you already know full well. But you should remember that your old uncle has been through the woods and knows that there is much underbrush that young men are very likely to pass by as to insignificant for them to notice. But as they grow older they learn that these small things are often very important in making up the whole, and are often the very foundation of success.

You say that your place is but little known and express a desire to have your post-office address at some large city instead of a small country village. I admit that it might be better for you at first if it were so, still as you are a young man and expect to make yourself known, and build a reputation by your own exertions, it will make but little difference in a few years whether you are located at New York or Dunkerhook, if you do your part well, good customers will find you; others you do not want. I know that there are some foolish people who think they must send to New York, whether it is for fine silks or Prairie chickens. I believe that I have told you the story of the nurseryman who sent an order to Mr. Cahoon, of Wisconsin, for his mammoth Rhubarb and had it sent to New York, then shipped it back to the near neighbors of Mr. Cahoon charging one hundred per cent advance on cost; the customers being perfectly satisfied with the price because it came from New York. You will often meet just such people and you must please them if possible, especially when they are willing to pay for their ignorance.

Do not let it trouble you if your near neighbors do not patronize you or scarcely look into your nursery, for it is quite possible that you will supply them with many articles although they may not be aware of it. Besides it is not best to encourage a too intimate acquaintance with a large circle of friends that live near by, for when all your beautiful specimen trees and vines come into bearing, you will have a great many Pear friends, and Grape friends, and so on to the end. People do not expect their butcher to furnish them occasional fine cuts without pay, or their grocer to treat them to specimens of their best tea, coffee and sugar gratis, but they seem to forget what it is that constitutes the nurserymens stock in trade, and that the fruit they desire you to give, is of much more value to you as specimens of what your saleable trees and vines will produce, than are the finest in any fruiterers window to him as specimen of his merchandise.

It is certainly very pleasant to have friends, but there is such a thing as having too many especially when one has business which requires his personal supervision.

If customers are few at the beginning, do not let it discourage you but look to the future with a hopeful eye, avoid the fatal

mistake which many young nurserymen have made of propagating a large quantity of trees, which soon grow in a few years to be totally unfit for sale. Many do this for the purpose of making a good show in their nurseries, but a good show in the pocket is much better, besides it costs less than to keep a nursery clear of weeds, and it is not always an easy matter for a new beginner to sell all the trees and plants he can grow. But I shall write you more fully on this point when I give you directions as to what kinds of plants to grow and how to propagate them.

Be very careful, and watchful in all you do, so as to avoid mistakes, and above all things be honest and industrious. Customers will forgive mistakes but never dishonesty.

If you should accidentally propagate a plant and sell it under a wrong name and afterwards discover your error, do not wait until every customer has discovered it, but write or send a circular to each and tell them you have made a mistake and wish to rectify it by refunding the money paid or in any other way which will be satisfactory.

You may think this course would be very humiliating and perhaps disgrace you in the good opinion of these customers, but it is not necessarily so, for a majority would reason somewhat thus; this young man means to be honest and is brave enough to confess that he has made a mistake (as all do in every walk of life) and if a slight error costs him so dearly he will not be likely to make a great many and we will patronize him still. For we much prefer to trade with a man whose conscience is so sensitive that it feels the weight of one error, than with one who has become so hardened that he would not feel the guilt of a hundred.

You must plant specimens of all kinds of trees and plants that you intend to propagate, for it will save you much time, trouble and expense to have your grafts, buds, &c., near at hand when you wish to use them. Besides, it is much better, to propagate from bearing trees than from those in the nursery as errors will be much sooner detected. Should you have any fruit or flower, about the variety of which you are not quite sure, send it with a piece of the stem and leaves to some one of our leading pomologists or florists or to the Editors of the Horticulturist for instance, and they will be most happy to render you assistance, provided you remember three things: 1st That you are the party to be accommodated, consequently. 2d Pay the express charges through. 3d Write a short letter and write it plain, stating just what you want to know and no more, not forgetting to put in a stamp to prepay postage on reply whether you get one by mail or otherwise.

Now John, a hint or two about advertising as it is time your advertisements were out if you expect them to be of service for spring sales.

Always advertise in the papers that circulate among people that take an interest in horticulture, and as a matter of course, such people take horticultural journals.

Do not advertise most in the papers that charge the least, for publishers generally know what is is worth per line, and I do not think they usually overcharge.

Be careful and not to *brag* in your advertisement; do not call all other nurserymen imitators of yourself, or claim to have the best stock in the country, when it is impossible for you to know this, without personally visiting every nursery, which would be perfectly impracticable. Neither offer a million of any particular plant when you have only ten thousand, as it is not essential that everybody should know how many you have; besides a million is a large number and even a quarter of that is still large and more than you will often find of any one kind of plant in any nursery.

All that is required is that you should supply your customers with good, well grown plants of the kinds they order, and your advertisements are to let them know that you are prepared to do this and do it well.

Yours sincerely

Uncle Silvinus.

Woodside, Feb. 1865.

MILDEW ON THE GRAPE-VINE, II.

BY HORTICOLA.

RESULTS.—INSTRUMENTS.

THE readers of the HORTICULTURIST will remember our article on grapevine mildew, furnished in the June number, 1864, of this Magazine. We gave in it a detailed description, based on a most interesting letter from Mr. L. A. Neubert, of Leipzic, of the application of flour of sulphur, and announced that another article was to follow, containing a description of the instruments. That announcement was stricken out by the then editor of the HORTICULTURIST. In order to be intelligible, we repeat here briefly the treatment of the vines.

I. Treatment of the vines *before* the leaves appear.

They must be thoroughly syringed, also walls, posts, trellises, etc., with the following mixture: Dissolve 8½ ounces of common salt, and 4 ounces of saltpetre, in 36 ounces (1 quart and ¼ pint) of water, adding 10 drops of Oleum Anthos (essence of rosemary), and 10 drops of Oleum Lavedulae (essence of Lavender), shaking the mixture thoroughly before using it. Add one part of it to 100-120 parts of water.

II. Treatment of the vines *when they are in leaf.*

Sprinkle them thoroughly with flour of sulphur.

1. As soon as the leaves appear. This first sulphuration is the most important of all. Mr. Neubert says in a letter to us, received in October last, that it has more effect than all the others combined.

2. As soon as they are in blossom.

3. As soon as the berries are of the size of peas.

4. As soon as they commence coloring.

We succeeded with the utmost difficulty to construct a bellows similar to that described in Dubrueil's writings. It is, however, a very clumsy, imperfect affair; yet it did the work well enough. We premise that a great many of the foreign kinds we are cultivating were, in the fall of 1863, so much enfeebled by the effects of the mildew, that we considered their destruction during the following summer as inevitable and certain. We carried out Mr. Neubert's directions to the letter, applying an extra sulphuration occasionally to some plants and even single leaves that needed it.

The *results* were astonishing in the highest degree. *There was not a trace of mildew to be found on any of my vines during the last summer and fall*, except on a Riessling and on some canes of my Delawares, about which I shall speak presently. My foreign kinds not only recovered, but made canes from 25 to 40 feet long, and as thick as my thumb.

The Riessling, mentioned in the above, had been overlooked; and when my attention once was attracted to it by the sickly appearance of the plant, we did not think it could live. While the other vines had made canes from 8 to 10 feet long, the shoots of the Riessling were not more than as many inches long; the leaves, of the size of a cent, were white with mildew. We immediately dusted it with sulphur. Instead of dying, it made a new shoot which was 19 feet long when we laid it down in November last.

The Delawares had been sprinkled but slightly. The ends of their canes were tied *horizontally*, seven feet above the ground, to a cord stretched between the posts, and had not been sprinkled at all. *The vines below, although but slightly sprinkled, did not show any mildew; the ends of the canes tied horizontally mildewed very badly, so that the leaves dropped prematurely.*

The Riessling, as well as the Delawares, show conclusively the value of systematic sulphuration. We are confident that we shall be able to eradicate the mildew this season entirely. We risk nothing in asserting that we shall have an abundant crop of grapes from our foreign kinds, which would be dead by this time without sulphuration.

The readers of the HORTICULTURIST, we trust, know that we are never ashamed to appear as learners before the public, and that we always state frankly the whole truth. There are, however, a number of competent witnesses, of whom we may be permitted to mention two. The one is Peter B. Mead, Consulting Horticulturist, and late editor of the HORTICULTURIST. He watched the progress of our operations with intense interest, visiting our collection of vines a number of times during the past summer. He once said: "Even if you did not wish to refer to me as a witness, I should consider it a sacred duty to make the results of your operations known. They surpass all my expectations, for I did not believe I should ever see vines in so beautiful a condition as yours are." The other is C. P. Schmidt, of Palisades, New York. We invited him to examine our vines; he came, after a conversation with Mr. Mead, in which Mr. Mead expressed himself as he had done towards us personally. He told us his expectations had been very high, but they were very much surpassed by what he saw. Mr. Schmidt is a gentleman of large experience in the culture of the vine.

The effect of sulphur on *thrips* is also very remarkable. We called Mr. Mead's attention to the fact that we had scarcely any thrips on our vines. This took place towards the end of July. The vines remained free from thrips; they yielded to the power of the sulphur.

The *instruments* are very simple and convenient. Before *de la Vergne's* bellows was invented, that with a box attached to it and with a straight tube was used. It is the same that most nurserymen use for fumigation, for which it is very convenient. But for sulphuration, it is now entirely superseded by *de la Vergne's* bellows. The sulphur contained in the first is so distant from the hands which hold the instrument that, by the long lever, its weight is very much increased. Its use is very fatiguing. In the second place, the tube is *straight*; therefore it is difficult to reach the underside of the leaves. Dubreuil has already shown these imperfections. Besides, it is not very cheap. Last spring we saw one in John Street, for which $3 50 were asked.

De la Vergne's bellows has no valve, and a curved tube which is closed by a piece of fine wire-cloth, which divides the sulphur so finely that it is thrown on the vines in the form of dust. The sulphur, being put in the bellows itself, does not fatigue the hands, and the curved tube enables the operator to reach the underside of the leaves as easily as any other part of the vine. It is the instrument which is now exclusively used in France; it is the instrument to which Mr. Neubert owed his success, and which wrought such a change on our own vines. As it is without any machinery whatever, even without a valve, the air passing in and out of the tube, it cannot get out of repair. It does the work so rapidly that we sulphurate about 500 vines thoroughly in three quarters of an hour. It requires but very little sulphur, but 15 lbs. having been applied to 5,000 vines during the past summer.

Another instrument is the so-called *grape-vine torch*. It consists of a cone made of common tin (sheet-iron coated with tin), the bottom (the base,) of which is closed with that same material perforated with numerous holes, large enough to put a piece of woollen yarn through each of them, leaving enough space for the sulphur to fall through when shaken. The woollen yarn spreads the sulphur very finely and evenly over the vines, but the *underside* of the leaves cannot be dashed with it. Dubreuil observes that the torch works well enough *when the leaves are perfectly dry*; when the yarn becomes moist, it does not work at all. He discarded, therefore, the yarn altogether, substituting for it very small holes, in which improved form the torch may be well adapted to dust the *upper side* of the leaves and single bunches. We have three forms of the torch in our possession, and must corroborate Dubreuil's experience.

Last summer we received from France a

bag with a tube to carry a supply of sulphur along. The bellows is very easily filled from it, as the tube of the bag fits in the hole of the bellows to receive the sulphur.

Our bellows being not only very clumsy, but also imperfect in several respects, we were induced, especially by Mr. Peter B. Mead, to import a dozen bellows from France. In the meantime, the number of gentlemen desirous of obtaining the bellows increased rapidly, so that we regretted not to have ordered six dozen. We learned, also, that the same instrument is extensively used in Europe to dust *hop vines* with sulphur; for, several years ago a certain kind of mildew, destructive to *hops*, made its appearance on the Continent as well as in this country. A gentleman from New Jersey, who grows hops on a large scale, informed us of the fact, requesting us urgently to let him have one of the bellows as soon as they should arrive here. A friend of our's, a florist, used our own instrument during the winter to free his roses from mildew, with perfect success. A lady friend at English Neighborhood applied sulphur this summer to her gooseberry bushes, and succeeded in raising large quantities where before a perfect berry had not been obtained. It is certain that the bellows will be in great demand when known.

At last they came to hand, but we were horror-struck when we ascertained from the original bills, that the cost of each instrument, which is but a trifle in France, amounts *here* to $4 47. Had our paper currency the value of gold, it would be only a little more than two dollars; still there stands the sum of four dollars and forty-seven cents.

We were frightened by looking at it; and after repeated consultations with Mr. Mead, who had engaged one of the bellows, we concluded to have some manufactured here, to lower the price of all by equalizing it. We tried to avoid the Charybdis, but we were caught by the Scilla. It became soon apparent that to procure the necessary tools and instruments, an enormous outlay of money had to be made. Not anticipating this in the beginning, we had ordered some of them, which, when furnished, did not answer at all. So we were forced by circumstances unforeseen to proceed in our course until we accomplished what we had been compelled to undertake.

EDITOR'S TABLE.

To Contributors and Others.—Address all Communications, for the Editorial and publishing departments, to Geo. E. & F. W. Woodward, 37 Park Row, New York.

We call the attention of our readers to our advertising columns this month as an evidence of the energy and prosperity of the nursery, floral and seed trade, whatever our readers may require in any department of Horticultural pursuits, will be found advertised or can be procured on application to some of our numerous advertisers: this advertising list is worthy of attentive perusal, as it marks a progress, decided and important in pursuits that are fast ranking themselves among the leading ones in this country. Horticulture in all its varied branches, practical and ornamental opens this new year of 1865 with an impetus hitherto unknown, and it advances with a firm and decisive step that surprises even its most earnest enthusiasts. An advertising list amounting to upwards of $1,000 cash in a single month and a subscription list that has increased 118 per cent during the last six months is a degree of prosperity beyond our reckoning. It plainly tells us that the energy displayed in the employment of first class talent in the editorial department brings with it its own reward.

WOODWARD'S COUNTRY HOMES.—This book is now ready for delivery, carefully written, elegantly illustrated and handsomely printed on heavy calendered paper, 168 pages, 12mo., 122 engravings, price $1 50 post paid to any address: the engravings are by E. C. Hussey Esqr. and the typography by Mr. S. Hallet, 74 Fulton Street. We are well pleased with the artistic and mechanical execution of the whole work, and recommend it to the attention of all who contemplate building or remodeling a Home in the Country.

BOOKS BY MAIL.—It may not be generally known by our readers, that books are now sent by mail to all parts of the country free of expense to the purchaser, that readers on the extreme frontier can get for the same price and in the same good order and condition, any book published, as if he had made a personal call on the publisher. We keep in this office a complete stock of all works relating to Agriculture, Horticulture, Architecture, Landscape Gardening, Rural Art &c., put them up in first class order and mail them free to any address on receipt of publishers prices., or we procure and mail in same manner any book on other subjects.

HARTFORD, Conn., Feb. 9, 1865.

MESSRS. WOODWARD:—Allow me to commend "Our Method," as developed by our mutual friend "Dash." ("——") My experience in grape growing for the past eighteen years, warrants me in endorsing his recommendations. So well does he point out an economical and satisfactory way of planting vineyards, that I offer, with much hesitancy, one single amendment to his method. He recommends the use of "the sub-soil plough in each furrow." Now, this may be the very "straw in the way," which would deter "the man of moderate means" from preparing his ground for a vineyard. Sub-soiling may be all well enough, in its way, but suppose we leave this out rather than run the risk of defeating our object; and, in its place, suggest the application of some additional power applied to the "ordinary two-horse plow,' so as to give increased depth of tilth by the deepest possible surface plowing. Sub-soil plows are not yet sufficiently common; nor are they within the easy reach of all those farmers and horticulturists to whom "our method" is so ably suggested. If the soil be well and deeply plowed, and the vines properly planted, may not extra dressings of surface manure, at intervals, be well advised in place of sub-soil plowing?

I am suspicious, at times—perhaps too much so—about this sub-soil and trenching business. It smacks, somewhat, of dogmatism—somewhat of those "routine plans," of Mead, Grant & Co., which may often make the neophyte "discouraged before he begins."

And here, by the way, I am reminded of that excellent and *suggestive* letter from F. R. Elliott. May we not all "expect to see great changes in ideas respecting grape culture during the next ten years?" It appears to me that grape growing, vineyard fashion, must be simplified, in order to be popularized among the cultivators of the soil generally.

Respectfully yours, &c., D. S. D.

BALTIMORE, *February 8th*, 1865.

MESS. G. E. & F. W. WOODWARD.

Gents: Enclosed please find Subscription for HORTICULTURIST, "*Gardener's Monthly and Country Gentlemen for* 1865."

I can put up with a plainer breakfast, and dispense with desserts for dinner, but cannot part with my old familiar friends after tea; so pile on the hickory, and bring in the apples and nuts and as the sparkling Catawba passes round, we will wish you all a happy and prosperous New Year.

GRAPE WRITERS TO THE FRONT.

LOUISVILLE, KY., *Jan'y. 14th*, 1865.

I must confess I am tired of the Grape War which has been carried on in your columns for some time. If I had the power I would send such writers to the front, and let General Grant teach them how to throw *grape* at the rebels.

Yours respectfully

R. E. THOMPSON.

At the Annual Meeting of the Vermont State Agricultural Society, the following officers were elected for 1865.

President, Hon. F. W. Colburn, Springfield.

Vice-Presidents, Hon. John Gregory, Northfield. Hon. Henry Keyes, Newbury.

Secretary, Henry Clark, Poultney.

Treasurer, J. W. Colburn, Springfield.

Officers of the Rutland County Vermont Agricultural Society.

President, Pitt W. Hyde, Hydeville.

Vice-Presidents, Linsey Rounds Jr., Clarendon. L. Howard Kellogg, Benson.

Secretary, Henry Clark, Poultney.

Treasurer, A. D. Smith, Danby.

Auditor, Henry F. Lathrop, Pitsford.

At the annual meeting of the Newburgh Bay Horticultural Society, held at Newburgh, on 7th February, 1865, the following officers were elected for the ensuing year: William A. Woodward, of Vails Gate, *President;* Rev. John Forsythe, D. D., O. S. Hathaway, *Vice Presidents;* Wm. L. Findley, *Secretary;* Daniel Smith, *Treasurer;* Charles Downing, Henry W. Sargent, T. B. Shelton, Joseph Howland, Wm. C. Hasbrouck, C. M. Wolcott, *Directors.*

This Society is organized pursuant to the Act of the Legislature of the State of New York, passed April, 1855. During the past year it held two Fairs, one in June, the other in September, having distributed about $500 in premiums with a cash surplus on hand of $375.

The bellows described by Horticola in his article on Mildew can be had of C. F. Erhard of Silverbrook nursery. See his advertisement.

It will be seen on reference to our advertising columns, that the Logan Nurseries, of Wm. Bright, near Philadelphia, are offered for sale. The reputation of these grounds for unusual care and neatness in their keeping, and for finely grown specimen evergreens, will make them attractive to a purchaser.

St. Catharines, C. W. *Feb'y* 10, 1865.

Messrs. Woodward, Horticulturist office.

Gentlemen: I enclose to you the sum of two dollars for 1865. Do you know whether mushrooms can be grown for market profitably? At what prices do they sell in your city market?

Yours truly,

D. W. Beadle.

We give you below the practical business-like reply of Mr. Josiah Carpenter.

New York, *Feb'y* 16, 1865.

Geo. E. & F. W. Woodward.

Gentlemen: Your inquiry is received. I give you all the information in my possession. At present they are very scarce, the autumn supply which was preserved having been exhausted. Propagation in this country does not seem to be encouraged. I believe that the most are raised in Massachusetts.

They can be raised in rich soil in a dark cellar, which can be done with very little expense at a remunerative profit, of course you understand how they are raised in France.

The demand for them here is constantly increasing with our population, all the first class Hotels and Saloons use them. The price last Fall when very plenty was from 25 to 50 cents per quart. Now they would bring an advance upon those prices.

Respectfully

Josiah Carpenter.

BOOKS, &c. RECEIVED.

The Self-Teaching system of Babbittonian Penmanship, which we commended last month, is now published at $1 50 by Babbitt & Wilt, 37 Park Row, N. Y.

Reid's Nurseries: Catalogue for 1865 and 1866, of fruit and ornamental trees, flowering shrubs, &c., cultivated, and for sale by David D. Buchanan, successor to the late Wm. Reid, Elizabeth, N. J.

CATALOGUE of Reading Nursery: J. N. Manning, Proprietor, Reading, Mass.

CATALOGUE of J. M. Jordan's Nursery, on Grand Avenue, St. Louis, Mo.

CATALOGUE of exclusively hardy plants and nursery stock for sale at the Nursery of Eugene A. Baumann, Landscape Gardener, practical Gardener and Nurseryman, Morrisania, New York; after 15th April, Rahway, New Jersey.

DESCRIPTIVE CATALOGUE, No. 2: Kitchen Garden Seeds, &c., for sale by Alfred Bridgeman, importer and dealer in Vegetable, Grass, Herb and Flower Seeds, 876 Broadway, N. Y.

BRIDGEMAN'S Priced Catalogue of flower seeds for 1865, is now in press.

DREER'S, Garden Calendar for 1865, designed to furnish brief directions for the cultivation and management of the esculent, flower and fruit garden. Seed warehouse 714 Chestnut street, Philadelphia, Henry A. Dreer.

THIRD ANNUAL REPORT of the State Board of Agriculture of the State of Michigan, for the year 1864.

MONTHLY REPORT of the Agricultural Department for January, 1865.

THE Journal of the New York State Agricultural Society, December, 1864.

ELLWANGER & BARRY'S descriptive catalogue, No. 1, of fruits.

ELLWANGER & BARRY'S descriptive catalogue, No. 2, of ornamental trees, shrubs, roses, flowering plants, &c.

DESCRIPTIVE CATALOGUE of fruits, ornamental trees and plants, and price list of Greenvale Nurseries, Oswego, New York. W. D. Strowger, general agent, Oswego, N. Y.

BEMENT'S RABBIT FANCIER, AND AMERICAN ROSE CULTURIST.—We have received copies of these works from the press of Orange Judd, 41 Park row, N Y., handsomely and attractively gotten up in paper covers, and mailed free to any address for thirty cents each.

LE VERGER, PUBLICATION PERIODIQUE D'ABORICULTURE ET DE POMOLOGIE: Monthly. Paris, per annum, twenty-five francs; a new publication, commencing with January. Each number will contain four colored plates, containing eight varieties of fruits; would cost in New York at present rates of exchange, about $18 per annum.

TRANSACTIONS of the California State Agricultural Society for the year 1863.

TRANSACTIONS of the Massachusetts Horticultural Society for the year 1864, from Eben Wight, Corresponding Secretary; containing also the proceedings on the occasion of laying the corner stone of the new Hall of the Massachusetts Horticultural Society, and the address of C. M. Hovey, Esq., President of the Society.

CATALOGUE OF STRAWBERRY PLANTS grown and for sale by Edward J. Evans & Co. York, Pennsylvania, for Spring 1865.

DESCRIPTIVE CATALOGUE of fruit and ornamental trees, shrubs and plants cultivated and for sale by Hubbard & Davis at the Detroit nursery, Fort Street, Detroit, Mich.

B. K. BLISS, SPRINGFIELD, MASS., CATALOGUE AND AMATEURS GUIDE TO THE FLOWER AND KITCHEN GARDEN:—Containing very full and carefully arranged lists of all the old standard varieties of both flower and vegetable seeds; as well as the latest novelties, with explicit directions for culture, and numerous engravings. This catalogue is valuable alike to the amateur and professional grower. It should be preserved as a book of reference. Sent to regular customers free, to all others for twenty-five cents, post-paid.